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106TH CONGRESS
1ST SESSION

H. R. 2086

To authorize funding for networking and information technology research and development for fiscal years 2000 through 2004, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 9, 1999

Mr. SENSENBRENNER (for himself, Mr. BROWN of California, Mr. DAVIS of Virginia, Mrs. MORELLA, Mr. EWING, Mr. COOK, Mr. BRADY of Texas, Mr. EHLERS, Mr. ETHERIDGE, Mr. WELDON of Florida, Mr. KUYKENDALL, Ms. STABENOW, Mr. LUCAS of Oklahoma, Mr. SMITH of Michigan, Mr. DOYLE, Mr. ROHRABACHER, Ms. EDDIE BERNICE JOHNSON of Texas, Ms. JACKSON-LEE of Texas, Mr. CAPUANO, Mr. BARTLETT of Maryland, Mr. UDALL of Colorado, Ms. WOOLSEY, Mr. CALVERT, Mr. GUTKNECHT, Ms. LOFGREN, and Mr. GORDON) introduced the following bill; which was referred to the Committee on Science, and in addition to the Committee on the Ways and Means, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To authorize funding for networking and information technology research and development for fiscal years 2000 through 2004, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Networking and Information Technology Research and Development Act''.

SEC. 2. FINDINGS.

The Congress makes the following findings:

(1) Information technology will continue to change the way Americans live, learn, and work. The information revolution will improve the workplace and the quality and accessibility of health care and education and make government more responsible and accessible.

(2) Information technology is an imperative enabling technology that contributes to scientific disciplines. Major advances in biomedical research, public safety, engineering, and other critical areas depend on further advances in computing and communications.

(3) The United States is the undisputed global leader in information technology.

(4) Information technology is recognized as a catalyst for economic growth and prosperity.

(5) Information technology represents one of the fastest growing sectors of the United States economy, with electronic commerce alone projected to become a trillion-dollar business by 2005.

(6) Businesses producing computers, semiconductors, software, and communications equipment account for one-third of the total growth in the United States economy since 1992.

(7) According to the United States Census Bureau, between 1993 and 1997, the information technology sector grew an average of 12.3 percent per year.

(8) Fundamental research in information technology has enabled the information revolution.

(9) Fundamental research in information technology has contributed to the creation of new industries and new, high-paying jobs.

(10) Scientific and engineering research and the availability of a skilled workforce are critical to continued economic growth driven by information technology.

(11) In 1997, private industry provided most of the funding for research and development in the information technology sector. The information technology sector now receives, in absolute terms, one-third of all corporate spending on research and development in the United States economy.

(12) The private sector tends to focus its spending on short-term, applied research.

(13) The Federal Government is uniquely positioned to support long-term fundamental research.

(14) Federal applied research in information technology has grown at almost twice the rate of Federal basic research since 1986.

(15) Federal science and engineering programs must increase their emphasis on long-term, high-risk research.

(16) Current Federal programs and support for fundamental research in information technology is inadequate if we are to maintain the Nation's global leadership in information technology.

SEC. 3. AUTHORIZATION OF APPROPRIATIONS.

(a) NATIONAL SCIENCE FOUNDATION.—Section 201(b) of the High-Performance Computing Act of 1991 (15 U.S.C. 5521(b)) is amended—

(1) by striking ''From sums otherwise authorized to be appropriated, there'' and inserting ''There'';

(2) by striking ''1995; and'' and inserting ''1995;''; and

(3) by striking the period at the end and inserting ''; $445,000,000 for fiscal year 2000; $468,500,000 for fiscal year 2001; $493,200,000 for fiscal year 2002; $544,100,000 for fiscal year 2003;

and $571,300,000 for fiscal year 2004. Amounts authorized under this subsection shall be the total amounts authorized to the National Science Foundation for a fiscal year for the Program, and shall not be in addition to amounts previously authorized by law for the purposes of the Program.''.

(b) NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.—Section 202(b) of the High-Performance Computing Act of 1991 (15 U.S.C. 5522(b)) is amended—

(1) by striking ''From sums otherwise authorized to be appropriated, there'' and inserting ''There'';

(2) by striking ''1995; and'' and inserting ''1995;''; and

(3) by striking the period at the end and inserting ''; $164,400,000 for fiscal year 2000; $201,000,000 for fiscal year 2001; $208,000,000 for fiscal year 2002; $224,000,000 for fiscal year 2003; and $231,000,000 for fiscal year 2004.''.

(c) DEPARTMENT OF ENERGY.—Section 203(e)(1) of the High-Performance Computing Act of 1991 (15 U.S.C. 5523(e)(1)) is amended—

(1) by striking ''1995; and'' and inserting ''1995;''; and

(2) by striking the period at the end and inserting ''; $100,600,000 for fiscal year 2000; $103,500,000 for fiscal year 2001; $107,000,000 for fiscal year 2002; $125,700,000 for fiscal year 2003; and $129,400,000 for fiscal year 2004.''.

(d) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—(1) Section 204(d)(1) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(d)(1)) is amended—

(A) by striking ''1995; and'' and inserting ''1995;''; and

(B) by striking ''1996; and'' and inserting ''1996; $9,000,000 for fiscal year 2000; $9,500,000 for fiscal year 2001; $10,500,000 for fiscal year 2002; $16,000,000 for fiscal year 2003; and $17,000,000 for fiscal year 2004; and''.

(2) Section 204(d) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(d)) is amended by striking ''From sums otherwise authorized to be appropriated, there'' and inserting ''There''.

(e) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.—Section 204(d)(2) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(d)(2)) is amended—

(1) by striking ''1995; and'' and inserting ''1995;''; and

(2) by striking the period at the end and inserting ''; $13,500,000 for fiscal year 2000; $13,900,000 for fiscal year 2001; $14,300,000 for fiscal year 2002; $14,800,000 for fiscal year 2003; and $15,200,000 for fiscal year 2004.''.

(f) ENVIRONMENTAL PROTECTION AGENCY.—Section 205(b) of the High-Performance Computing Act of 1991 (15 U.S.C. 5525(b)) is amended—

(1) by striking ''From sums otherwise authorized to be appropriated, there'' and inserting ''There'';

(2) by striking ''1995; and'' and inserting ''1995;''; and

(3) by striking the period at the end and inserting ''; $4,200,000 for fiscal year 2000; $4,300,000 for fiscal year 2001; $4,500,000 for fiscal year 2002; $4,600,000 for fiscal year 2003; and $4,700,000 for fiscal year 2004.''.

SEC. 4. NETWORKING AND INFORMATION TECHNOLOGY RESEARCH AND DEVELOPMENT.

(a) NATIONAL SCIENCE FOUNDATION.—Section 201 of the High-Performance Computing Act of 1991 (15

U.S.C. 5521) is amended by adding at the end the following new subsections:

"(c) NETWORKING AND INFORMATION TECHNOLOGY RESEARCH AND DEVELOPMENT.—(1) Of the amounts authorized under subsection (b), $316,000,000 for fiscal year 2000; $333,000,000 for fiscal year 2001; $352,000,000 for fiscal year 2002; $390,000,000 for fiscal year 2003; and $415,000,000 for fiscal year 2004 shall be available for grants for long-term basic research on networking and information technology, with priority given to research that helps address issues related to high end computing and software and network stability, fragility, reliability, security (including privacy), and scalability.

"(2) In each of the fiscal years 2000 and 2001, the National Science Foundation shall award under this subsection up to 20 large grants of up to $1,000,000 each, and in each of the fiscal years 2002, 2003, and 2004, the National Science Foundation shall award under this subsection up to 30 large grants of up to $1,000,000 each.

"(3)(A) Of the amounts described in paragraph (1), $40,000,000 for fiscal year 2000; $40,000,000 for fiscal year 2001; $45,000,000 for fiscal year 2002; $45,000,000 for fiscal year 2003; and $50,000,000 for fiscal year 2004 shall be available for grants of up to $5,000,000 each for Information Technology Research Centers.

''(B) For purposes of this paragraph, the term 'Information Technology Research Centers' means groups of 6 or more researchers collaborating across scientific and engineering disciplines on large-scale long-term research projects which will significantly advance the science supporting the development of information technology or the use of information technology in addressing scientific issues of national importance.

''(d) MAJOR RESEARCH EQUIPMENT.—(1) In addition to the amounts authorized under subsection (b), there are authorized to be appropriated to the National Science Foundation $70,000,000 for fiscal year 2000, $70,000,000 for fiscal year 2001, $80,000,000 for fiscal year 2002, $80,000,000 for fiscal year 2003, and $85,000,000 for fiscal year 2004 for grants for the development of major research equipment to establish terascale computing capabilities at 1 or more sites and to promote diverse computing architectures.

''(2) Grants awarded under this subsection shall be awarded through an open, peer-reviewed competition.

''(3) As a condition of receiving a grant under this subsection, an awardee must agree—

''(A) to connect to the National Science Foundation's Partnership for Advanced Computational Infrastructure network;

''(B) to the maximum extent practicable, to coordinate with other federally funded large-scale computing and simulation efforts; and

''(C) to provide open access to all grant recipients under this subsection or subsection (c).

''(e) INFORMATION TECHNOLOGY INTERNSHIP GRANTS.—(1) Of the amounts described in subsection (c)(1), $10,000,000 for fiscal year 2000, $15,000,000 for fiscal year 2001, $20,000,000 for fiscal year 2002, $25,000,000 for fiscal year 2003, and $25,000,000 for fiscal year 2004 shall be available for institutions of higher education to establish scientific internship programs in information technology research at private sector companies. Grants under this subsection shall be made on the condition that at least an equal amount of funding for the internship shall be provided by the private sector company at which the internship will take place.

''(2) For purposes of this subsection, the term 'institution of higher education' has the meaning given that term in section 1201(a) of the Higher Education Act of 1965 (20 U.S.C. 1141(a)).

''(f) PEER REVIEW.—All grants made under this section shall be made only after being subject to peer review by panels or groups having private sector representation.''.

(b) OTHER PROGRAM AGENCIES.—

(1) NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.—Section 202(a) of the High-Performance Computing Act of 1991 (15 U.S.C. 5522(a)) is amended by inserting ", and may participate in or support research described in section 201(c)(1)" after "and experimentation".

(2) DEPARTMENT OF ENERGY.—Section 203(a) of the High-Performance Computing Act of 1991 (15 U.S.C. 5523(a)) is amended by striking the period at the end and inserting a comma, and by adding after paragraph (4) the following:

"and may participate in or support research described in section 201(c)(1).".

(3) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—Section 204(a)(1) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(a)(1)) is amended by striking "; and" at the end of subparagraph (C) and inserting a comma, and by adding after subparagraph (C) the following: "and may participate in or support research described in section 201(c)(1); and".

(4) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION.—Section 204(a)(2) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(a)(2)) is amended by inserting ", and may

participate in or support research described in section 201(c)(1)'' after ''agency missions''.

(5) ENVIRONMENTAL PROTECTION AGENCY.—Section 205(a) of the High-Performance Computing Act of 1991 (15 U.S.C. 5525(a)) is amended by inserting '', and may participate in or support research described in section 201(c)(1)'' after ''dynamics models''.

SEC. 5. NEXT GENERATION INTERNET.

Section 103 of the High-Performance Computing Act of 1991 (15 U.S.C. 5513) is amended—

(1) by striking subsection (c) and redesignating subsection (d) and subsection (c); and

(2) in subsection (c), as so redesignated by paragraph (1) of this section—

(A) in paragraph (1)—

(i) by striking ''1999 and'' and inserting ''1999,''; and

(ii) by inserting '', $15,000,000 for fiscal year 2001, and $15,000,000 for fiscal year 2002'' after ''fiscal year 2000'';

(B) in paragraph (2), by inserting '', and $25,000,000 for fiscal year 2001 and $25,000,000 for fiscal year 2002'' after ''Act of 1998'';

(C) in paragraph (4)—

(i) by striking ''1999 and'' and inserting ''1999,''; and

(ii) by inserting '', $10,000,000 for fiscal year 2001, and $10,000,000 for fiscal year 2002'' after ''fiscal year 2000''; and

(D) in paragraph (5)—

(i) by striking ''1999 and'' and inserting ''1999,''; and

(ii) by inserting '', $5,500,000 for fiscal year 2001, and $5,500,000 for fiscal year 2002'' after ''fiscal year 2000''.

SEC. 6. REPORTING REQUIREMENTS.

Section 101 of the High-Performance Computing Act of 1991 (15 U.S.C. 5511) is amended—

(1) in subsection (b)—

(A) by redesignating paragraphs (1) through (5) as subparagraphs (A) through (E), respectively;

(B) by inserting ''(1)'' after ''ADVISORY COMMITTEE.—''; and

(C) by adding at the end the following new paragraph:

''(2) In addition to the duties outlined in paragraph (1), the advisory committee shall conduct periodic evaluations of the funding, management, implementation, and activities of the Program, the Next Generation Internet program, and the Networking and Information Technology Research and Development program, and shall report not less frequently than once every 2 fiscal years to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on its findings and recommendations. The first report shall be due within 1 year after the date of the enactment of the Networking and Information Technology Research and Development Act.''; and

(2) in subsection (c)(1)(A) and (2), by inserting '', including the Next Generation Internet program and the Networking and Information Technology Research and Development program'' after ''Program'' each place it appears.

SEC. 7. EVALUATION OF CAPABILITIES OF FOREIGN ENCRYPTION.

(a) STUDY.—The National Science Foundation shall undertake a study comparing the availability of encryption technologies in foreign countries to the encryption technologies subject to export restrictions in the United States.

(b) REPORT TO CONGRESS.—Not later than 6 months after the date of enactment of this Act, the National Science Foundation shall transmit to the Congress a report on the results of the study undertaken under subsection (a).

SEC. 8. RESEARCH CREDIT MADE PERMANENT.

(a) IN GENERAL.—Section 41 of the Internal Revenue Code of 1986 (relating to credit for increasing research activities) is amended by striking subsection (h).

(b) CONFORMING AMENDMENT.—Paragraph (1) of section 45C(b) of such Code is amended by striking subparagraph (D).

(c) EFFECTIVE DATE.—The amendments made by this section shall apply to amounts paid or incurred after June 30, 1999.

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